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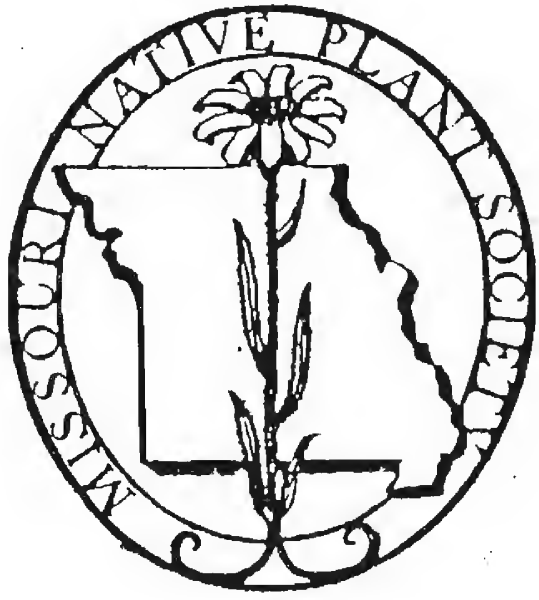

JOURNAL OF THE MISSOURI NATIVE PLANT SOCIETY

Published for the Society
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Missouriensis is the official publication of the Missouri Native Plant Society. Founded in 1979 as a non-profit corporation, the Society is devoted to the conservation and study of the plants growing wild in Missouri, to the education of the public about the significance of the native flora and its habitat, and to the publication of related information.

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ASTER MACROPHYLLUS L. (ASTERACEAE), A NEW RECORD FOR MISSOURI

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An unusual population of asters was discovered on May 18, 1984, by the senior author and Mr. Oren Hutchison, while surveying populations of Lady's Slipper Orchids (*Cypripedium reginae*) in Texas County. A return trip later that year yielded fertile material, which was determined as *Aster macrophyllus* L., also known as Large-leaved Aster. According to Yatskievych & Turner (1990), this represents the first record of *A. macrophyllus* from Missouri. Herbarium specimens were verified by Dr. Warren Lamboy (Missouri Botanical Garden).

Subsequent to this initial discovery, Large-leaved Aster was found to occur at five additional sites in Texas, Shannon, and Howell Counties, and it is thus firmly established as a member of Missouri's flora. The following collections (all at MO) document the existence of *A. macrophyllus* in the state:

> HOWELL COUNTY: Middle Fork of Indian Creek, ca 5 air mi W of Willow Springs, 11 June 1990, *Summers 3305.*
>
> SHANNON COUNTY: Bay Creek, a tributary of Jack's Fork River, 5 mi W of Alley Springs, 28 Sep. 1989, *Summers 3110.*
>
> TEXAS COUNTY: Barn Hollow, on W side of Jack's Fork River, ca 3.5 air miles N of Mountain View, 25 Sep. 1984, *Summers 1480*; same locality, 27 July 1990, *Yatskievych & Summers 90-260*; along bluff along Jack's Fork River, ca 1/2 mi down stream from V.F.W. Campground, 22 Aug 1990, *Summers & Ryan 3628.*

In addition to the vouchered sites, this species was also observed (but not collected at the following two localities:

> HOWELL COUNTY: Hoff Sink, on ridge bordering the Eleven Point River SW of Mountain View, 20 June 1990 (Summers)
>
> TEXAS COUNTY: bluff along Jack's Fork River, ca 1/2 mi down stream from Highway 17 bridge, 15 Aug. 1990 (Summers, Ryan, & Skinner).

Aster macrophyllus is most commonly encountered as large colonies of sterile plants with basal leaves, which are produced at the ends of long-creeping

rhizomes. Few fertile stems are produced annually in any Missouri population, even though hundreds of plants may be scattered over several acres. The basal leaves have long petioles and ovate-cordate blades (Figure 1) up to 20 X 30 cm (hence the common name, Large-leaved Aster). The lower cauline leaves are similar to the basal leaves, but smaller, with upper leaves narrower and further reduced in size. The inflorescence are relatively flat-topped in shape (Figure 2), with scattered flowering heads to 4 cm in diameter (including the spreading ray flowers). The rays are violet, bluish, or lavender, fading with age.

In Missouri, the species is found in acid soils (with chert residuum or sandstone substrate), in the rocky understory of dry-mesic woods along the steep, north-facing slopes of the hollows associated with Missouri's scenic Ozark rivers. At the Shannon County site, some of the plants grow on dolomite ledges, but the dolomite bluff in this area is closely overlain by a layer of chert (where most of the plants grow). Thus the soil pockets on these dolomite ledges are undoubtedly more acidic than is usual for carbonate substrates.

Large-leaved Aster belongs to *Aster* section *Biotia*, a well-marked group of eight taxa distributed primarily in the eastern half of the United States (Lamboy, 1990). Its closest relative in Missouri is Forked Aster, *A. furcatus* Burgess, another member of this section. Large-leaved Aster resembles the Forked Aster in its relatively flat-topped inflorescences, its two-seriate pappus (a ring of short bristles outside the longer inner nes), and its cordate, petiolate leaves. The two species sometimes grow in close proximity in Missouri. Although Large-leaved Aster will key to *A. furcatus* in the key to *Aster* species found in Steyermark's (1963) *Flora of Missouri*, it is easily separable from the latter species by it's very large, ovate-cordate basal leaves, violet to lilac ray flowers, and the presence of dense, stipitate glands on its involucral bracts and peduncles. *Aster furcatus* has eglandular inflorescences and a few noncordate basal leaves present at flowering. Also, *A. macrophyllus* grows in acidic soils, while *A. furcatus* is restricted to dolomite substrates, which produce more alkaline soils.

According to Lamboy (1990), *A. macrophyllus* occurs primarily in northeastern North America, ranging west to Minnesota and eastern Manitoba. In the United States, most populations occur in the Appalachians, as far south as northern Georgia. The Missouri populations form the southwestern extreme of the species' documented range. A historical locality (based on a collection made in 1848) in Effingham County, Illinois, some 400 km to the northeast of the Shannon County population, is the closest occurrence of the species documented by Lamboy (1990). This Illinois locality, which has not been relocated in modern times, is itself 300-400 km disjunct from the closest extant populations in northern Illinois and Indiana, and in central Tennessee (Lamboy, 1990). The Missouri populations are thus a significant southwestern disjunction from the main part of the species' range in North America. It may be that this species is another relict from more northern climates, stranded on cool, north-facing slopes

in Missouri as the Pleistocene glaciers receded and the overall climate warmed.

Smith (1988) reported the existence at UARK of a single Arkansas collection from Benton County (the northwesternmost county of that state), which was annotated by Lamboy as *A. macrophyllus*, but not discussed or cited in his dissertation. Smith suggested that because the closest extant populations then known were several hundred miles away northern Illinois, the Arkansas specimen might represent a mislabelled collection, and he excluded the species from his listing of the Arkansas flora. With the discovery of large-leaved aster in southern Missouri, the possibility of this species' occurrence in the Ozarks of Arkansas no longer seems so far-fetched. This interesting plant should continue to be searched for in likely habitats in northern Arkansas, as well as in other parts of the Missouri Ozarks.

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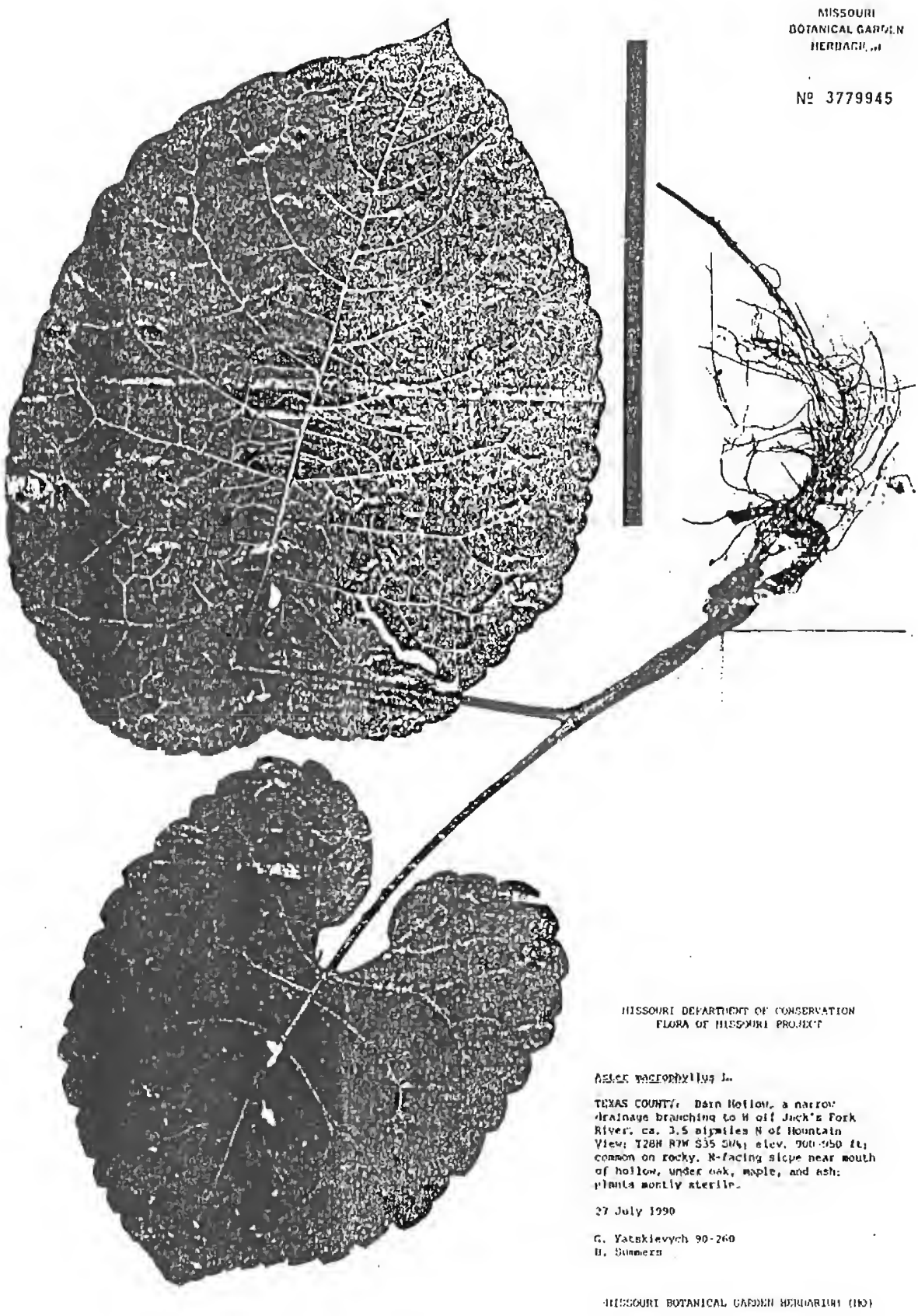
MISSOURI
BOTANICAL GARDEN
HERBARIUM
№ 3779945
MISSOURI DEPARTMENT OF CONSERVATION
FLORA OF MISSOURI PROJECT
Aster macrophyllus L.
TEXAS COUNTY: Dain Hollow, a narrow drainage branching to N off Jack's Fork River; ca. 3.5 airmiles N of Mountain View; T28N R7W S35 SW¼; elev. 900-950 ft; common on rocky, N-facing slope near mouth of hollow, under oak, maple, and ash; plants mostly sterile.
27 July 1990
G. Yatskievych 90-260
B. Summers
MISSOURI BOTANICAL GARDEN HERBARIUM (MO)

Figure 1. Photocopy of sterile specimen of *Aster macrophyllus* (*Yatskievych & Summers 90-260*), showing large, cordate basal leaves. Scale = 15 cm.

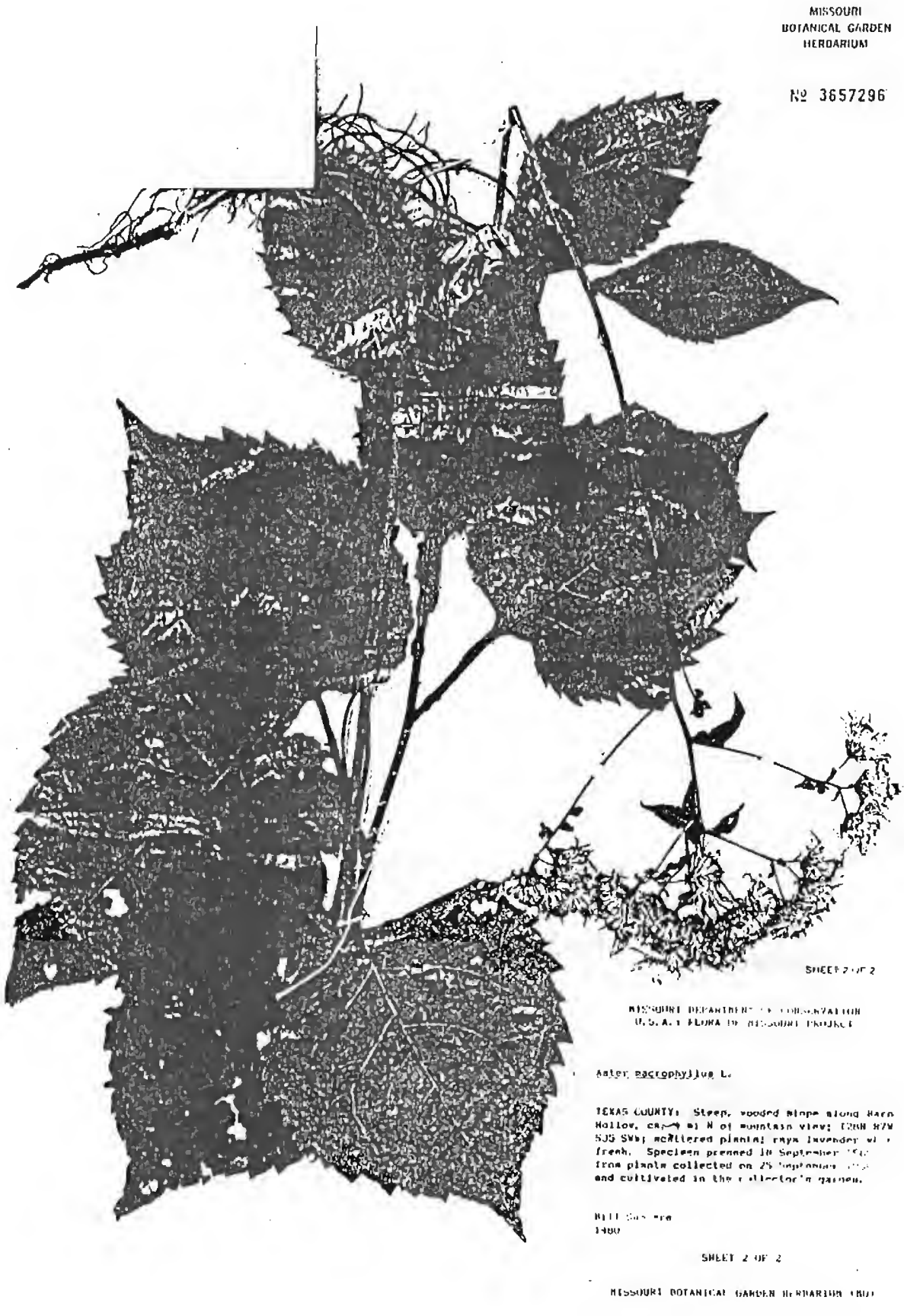

Figure 2. Photocopy of herbarium specimen of fertile plant of *Aster macrophyllus* (*Summers 1480*), ,showing flat-topped inflorescence and cauline leaves. Scale = 15 cm.

RANUNCULUS TESTICULARIS A NEW, WEEDY BUTTERCUP FOR MISSOURI

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In 1987, a colony of *Ranunculus testicularis* Crantz. was discovered in compacted gravelly soils of campsites at Cuivre River State Park, Lincoln County, Missouri. This diminutive buttercup is distinctive in its grayish appressed hariness, dissected leaves with linear segments, and unique heads of wooly achenes. The plants were concentrated around camp site #10 in the electric campground at the park, forming an almost pure stand in compacted gravel near the center of the site. Scattered plants occurred through the rest of the campsite, as well as in open areas of adjacent sites. Further exploration in subsequent years has revealed small colonies in outlying camp sites, but whether these reflect an expanding population is unknown. In the four growing seasons we have been observing the plants, the population appears to be stable or slowly increasing. *Ranunculus testicularis*, commonly called Hornseed or Bur Buttercup, is an Old World native that has become established in the western United States and adjacent Canada, as well as the western Great Plains, especially on xeric soils and in sagebrush areas. Hitchcock and Cronquist (1973) record it from five western states and note it is "rapidly spreading", while Weber (1989) terms it "rapidly spreading" on the eastern slope of the Colorado Rockies. Cusick (1989) notes that the plant is known from 14 states and British Columbia. Sutherland (1986) mentions that the plant is "likely spreading" in the western Great Plains. Interestingly, he also notes it as a weed of campgrounds. The plant has recently been reported from a campground in Iowa (Pohl 1984) and from a trampled picnic and camping site in Ohio (Cusick 1989). The regularity with which plants are reported from campgrounds suggests a possible means of dispersal for eastern North American populations.

It is unknown how long the plants had been established at the park prior to their discovery in 1987. They appear to be restricted to compacted, sterile areas where competition from other vegetation has been reduced by trampling. Twenty-one vascular taxa were associated with the *Ranunculus testicularis*; of these 13 are introduced taxa and eight are faculatively weedy native taxa with no innate conservatism or niche fidelity:

Native Associates	Introduced Associates
Aster pilosus	*Arenaria serpyllifolia*
Draba brachycarpa	*Capsella bursa-pastoris*
Myosurus minimus	*Cerastium pumilum*
Plantago pusilla	*Draba verna*
Plantago rugelii	*Holosteum umbellatum*
Poa annua	*Matricaria matricarioides*
Ranunculus abortivus	*Medicago lupulina*
Veronica peregrina	*Plantago lanceolata*
	Polygonum aviculare
	Sclerochloa dura
	Taraxacum officinale
	Trifolium pratense
	Veronica arvensis

As shown in Figure 1, the Missouri plants are low, spreading-branched, scapose annuals seldom exceeding 4 cm tall. The plants are visibly gray tomentose with mostly appressed thin hairs. Leaves are entirely basal, petiolate, mostly ternate but occasionally biternate, usually less than 3 cm long, somewhat fleshy, with flat linear segments. The flowers have 5 often early-cauducous petals, these light yellow at first but aging pinkish to whitish, 3-5 mm long. Achenes are numerous, ca. 4 mm long, with a prominent beak, the central fertile chamber subtended on either side by two empty, pouch-like chambers. The achenes are aggregated into cylindrical heads resembling miniature pineapples. Missouri plants flower in early spring; usually by late April only fruiting plants are evident. Because of the empty chambers on either side of the achene, the plants are sometimes placed in a separate genus, as *Ceratocephalus testiculatus* (L.) Pers. (Sutherland 1986). Weber (1990) considers the correct name for this plant to be *Ceratocephala orthoceras* DC.

We suggest that the plant's potential to become a problematical weed in Missouri natural areas is essentially nonexistent. Although it is mentioned as rapidly spreading in dry soils in areas west of Missouri, it appears that the increased competition in a higher rainfall region such as Missouri will restrict midwestern populations to severely disturbed sites where competition from other vegetation is minimal. It is highly probable that other midwestern populations will be discovered in similar anthropogenically perturbed sites; the plants may even become problematical in overgrazed range, especially on xeric sites. Olsen et al. (1982) provide evidence that the plants are highly poisonous to sheep.

Figure 1. *Ranunculus testicularis*, showing flowers and fruits. Background scale is in centimeters. (Photo by Bruce Schuette).

Voucher specimens: MISSOURI: LINCOLN COUNTY. Cuivre River State Park, in vicinity of electric campground, just north east of Lake Lincoln. In compactd gravelly soil of camp site # 10. NW1/4 NW1/4 sec. 9 T49N R1E. 20 April 1987. Ladd 12167 (MOR), Schuette 1380 (MO).

ACKNOWLEDGMENTS

Thanks to George Yatskievych, Missouri Department of Conservation, for his assistance and suggestions.

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GOLDIE'S FERN AND THE THREE BARREN STRAWBERRIES

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Once upon a time deep in Missouri's dry-mesic chert forest there lived three barren strawberries. There was papa barren strawberry, or Waldo, who was related to an Indian duke named *Duchesnea*. There was mama barren strawberry, who was at anthesis and was the pome of Waldo's eye. And there was baby barren strawberry who was immature and who was just called "Rose" since her diagnostic morphological characters were not yet sufficiently developed. They all lived on the ledges of a moist sandstone cliff of the Roubidoux formation. One day some dolomite crashed down around them from an outcrop up above. Being acidophiles, they had to leave their niches which were rapidly becoming circumneutral. The barren strawberries were good runners so they ran away to wait for the pH to drop.

It just so happened that a rare fern named Goldie was migrating through the area in search of suitable habitat. Goldie found the moist sandstone cliff; and, since she was "frond" of moist rocky places, she decided to try the barren strawberries' rock ledges. Waldo's ledge was too hard because of accumulated chert residuum. Mama strawberry's ledge was too soft. But baby Rose's ledge was just right and Goldie sank her roots into it. But Rose's ledge had developed a crack during last winter's freezing rain and the turgor pressure in Goldie's roots caused the ledge to break.

Then Goldie noticed the nutrients that had accumulated in the strawberries' habitat. She tried Waldo's nutrients, but they were far too acidic. She tried mama strawberry's nutrients and they were a little acidic too. Then she tried Rose's nutrients. They were just the right pH and she absorbed them all through osmosis.

By this time it was getting late in the season and Goldie started thinking about going dormant. She tried Waldo's niche, but it was too exposed to solar radiation. She tried mama strawberry's niche, and it was too drafty. Then she tried what was left of Rose's niche, and it was just right. So Goldie began to enter dormancy.

At about this time the barren strawberries came trailing home. They knew at once that someone had been there. Waldo said, "Someone's been

* This paper was presented at the 1990 at the 1990 Section Conference of the Missouri Department of Conservation's Natural History Section. It was read in the context of the author's recent fatherhood as necessary practice of story-telling skills in order to communicate at a child's level.

growing on my ledge." Mama strawberry said, "Someone's been growing on my ledge." Rose said, "Someone's been growing on my ledge and they broke it!"

Then Waldo noticed a loss of nutrients and said, "Someone's been absorbing my nutrients." Mama strawberry echoed, "Someone's been absorbing my nutrients." Rose cried, "Someone's been absorbing my nutrients and they're all gone."

In all of this "diffusion" Waldo finally realized what had happened. "Someone's been occupying my niche!" he exclaimed, and he was nearly chlorotic with anger. If he had had a capsule rather than an aggregate of achenes, he would have dehisced right then and there. "Someone's been occupying my niche too!" said mama strawberry, and the chromoplasts in her leaves were flushed with carotenoids. Then Rose cried "Someone's been occupying my niche too, and the dirty cryptogam is still here!" With that outburst Goldie raised her fiddlehead and bolted. She was just able to release her tiny spores to the wind. Even though Goldie was protected by state law, she wasn't about to risk her genome to a hostile bunch of strawberries. She rode the wind far away and never returned to the moist sandstone cliff.

And the moral of the story is:

> If you're only a vascular cryptogam, don't debate niche-fidelity with angry angiosperms . . . or your status may change from rare to endangered.

THE MISSOURI WILDFLOWER THAT WASN'T

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Flora of Missouri Project
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In his 1983 book, *Where Have All the Wildflowers Gone*, Robert Mohlenbrock provides a detailed account of the bizarre *Thismia americana*. This tiny member of the mostly tropical family Burmanniaceae (which are monocots with a saprophytic lifestyle) was discovered in 1912 and subsequently described as new to science by the late Norma Pfeiffer, based upon plants she had stumbled upon in the Lake Calumet area of the Chicago region, in Illinois. It has not been seen alive since Pfeiffer's original collections were made, although it has been searched for by many regional botanists. Much of the potential habitat in the Chicago region has been destroyed by industrialization, but some Illinois botanists still hold hopes of relocating this mysterious wildflower.

Recently, the noted botanical historian, Joseph Ewan, brought another apparent case of a midwestern species of Burmanniaceae to my attention. In completing some research of Thomas Nuttall (one of the earliest botanists to work in Missouri), Dr. Ewan came across an 1834 description of *Apteria setacea* in the *Journal of the Academy of Natural Sciences of Philadelphia* (7: 64). What was surprising about this paper was that Nuttall based his description partially upon a collection made, "In the vicinity of St. Louis, Missouri, by Mr. L. C. Beck." When I followed this up at the library at the Missouri Botanical Garden, I was further amazed to find specimens attributed to Missouri cited both in the 1938 worldwide monograph of the family, by F. P. Jonker (*Meded. Bot. Mus. Herb. Rijks Univ. Utrecht* 51: 1-279), and in the more recent (1986) *Flora Meotropica* monograph (42: 1-189) of the group by P. J. M. Maas and his collaborators. Here, apparently, was a very unusual Missouri wildflower overlooked by Steyermark and all other recent botanists in the state!

The case for *Apteria aphylla* (as it's now called) in Missouri seemed reasonable on the surface. The species is well documented from the Coastal Plain floras from Florida to Texas, and therefore might reasonably be expected to occur in sandy areas of Missouri's Bootheel, where several other Coastal Plain species occur. Also, Lewis Caleb Beck lived in St: Louis during parts of 1819 to 1821. This medical doctor and avid naturalist was known for the painstaking accuracy of his observations and authored one of the earliest gazeteers of Missouri and Illinois in 1823. His botanical collections from this period are preserved in such herbaria as those at Kew Gardens in London, the National Natural History Museum of France in Paris, the New York State Museum (Beck lived most

of his life in Albany), and the Academy of Natural Sciences in Philadelphia (where Nuttall's materials are also kept).

As you may infer from this article's title, however, things did not exactly work out the way that I expected. I consulted with Deborah Qualls Lewis, who is curator of the Ada Hayden Herbarium at Iowa State University, and who is completing a treatment of the Burmanniaceae for the Flora of North America Project. In examining specimens of the family from most of the major herbaria, she was able to eliminate all of the collections cited for Missouri in the two earlier monographs mentioned above. All of these, such as *Tracy 5015*, collected in 1898 at "Bond's Point", actually originate from southern Mississippi, rather than Missouri. In each case, the collector abbreviated the state's name as "Miss.", which was misinterpreted by the European monographers. Names such as "Long Beach" and "Ocean Springs", which appear on some of these collections, seem more appropriate for coastal areas as well.

The situation regarding Beck's original collection remains to be clarified, however. The specimen examined by Nuttall has yet to be relocated in any of the herbaria. It is possible that there was a mixup in the original label for the specimen, but this seems doubtful in light of Beck's almost fanatical attention to detail. However, Carroll Wood, who had to struggle with this same distributional discrepancy during his research on, "The Genera of Burmanniaceae in the Southeastern United States," (*J. Arnold Arbor.* 64: 293-307, 1983), suggested another possible explanation for this problem. The locality data may refer either to the city of Bay St. Louis or to St. Louis Bay, both of which are located in Mississippi (Hancock and Harrison counties). Although a detailed itinerary of Beck's travels has not been published, it seems at least plausible that he could have collected *Apteria* in Mississippi, rather than Missouri, and that Nuttall might later have misinterpreted the locality data accompanying Beck's specimen. The solution to this problem will have to await the rediscovery of Beck's specimen, if it should still exist in some herbarium.

It seems safe to assume, at least for the present, that *Apteria aphylla* is not a member of the Missouri flora. The plants are so small and inconspicuous, however, that it is not outside the realm of possibility for the species to occur in some out-of-the-way sandy area in the Bootheel, away from botanists' prying eyes. Perhaps this small saprophyte could eventually reach the status of *Thismia* in Illinois: a plant not found, even after ardent searches, but one whose mystery will continue to attract the attention of optimistic naturalists for time to come. In that sense, the mysterious *Apteria* continues to be, "The Missouri wildflower that wasn't."

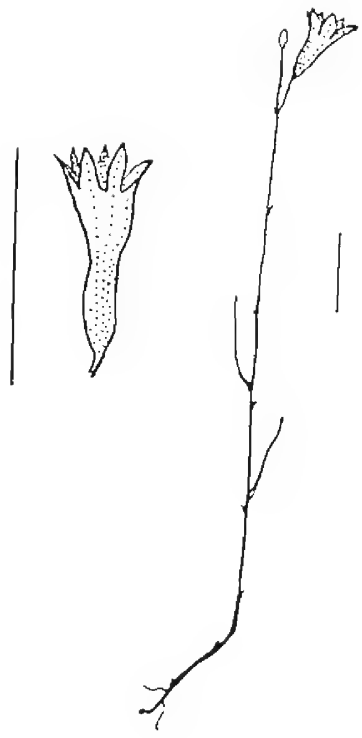

Figure 1. *Apteria aphylla* (from a specimen at the Missouri Botanical Garden (*Kral 44931*), collected in Alabama. Scale bars = 1 cm.

A NEW EUPATORIUM FOR MISSOURI

Since many of our members do not have access to other botanical literature, the following new record is noted for Missouri:

Eupatorium maculatum L. (ASTERACEAE), Lafayette County, *Douglas Ladd 13302* (MOR). Several plants were scattered through the grazed portions of a small raised fen along a south-flowing tributary of Salt Fork Creek. (Castanea 55: 293-292. 1990).

BYLAWS OF THE MISSOURI NATIVE PLANT SOCIETY

(Revised, December 1990)

ARTICLE I - Name and Purpose

Section 1. The name of this society shall be the Missouri Native Plant Society (hereinafter referred to as "the Society").

Section 2. The purpose of the Society is to promote the enjoyment, preservation, conservation, restoration, and study of the flora native to Missouri; to educate the public about the values of the beauty, diversity, and environmental importance of indigenous vegetation; and to publish related information.

ARTICLE II - Membership

Section 1. Membership in the Society shall be open to all persons interested in the purposes of the Society upon application to the Treasurer, accompanied by remittance for dues as hereinafter provided. Membership classification shall be set as needed by the Board of Directors.

Section 2. Each member shall be entitled to one (1) vote on any question requiring a vote of the membership of the Society.

ARTICLE III - Meetings

An annual meeting of the Society shall be held in June of each year at a date and place determined by the Board of Directors. Special meetings of the membership may be called at any time by the Board of Directors. All members shall be notified in writing not less than two (2) weeks before such meetings.

ARTICLE IV - Dues

Dues shall be fixed and revised as needed by the Board of Directors.

ARTICLE V - Officers

Section 1. The officers shall be a President, Vice-President, Secretary, and Treasurer who shall be elected for a term of two (2) years. Officers shall serve without compensation.

Section 2. The President shall preside at meetings of the membership and of the Board of Directors, and shall perform the recognized functions of the office.

Section 3. The Vice-President shall preside in the absence of the President, shall

be responsible for Board of Directors and annual meeting programs and shall give notification of such meetings to the general membership, and shall perform other recognized functions of the office. The Vice-President shall become President if the office of President becomes vacant.

Section 4. The Secretary shall keep the minutes of all meetings of the Society and the Board of Directors. The Secretary shall prepare such directives and other documents as are needed and authorized by the Board of Directors, shall provide a copy of the Society Bylaws to each new Director, and shall perform other recognized functions of the office.

Section 5. The Treasurer shall keep and maintain accurate accounts of the transactions of the Society, including accounts of its assets, liabilities, receipts and disbursements. The Treasurer shall deposit all money and other valuables in the name and to the credit of the Society with such depositories as may be designated by the Board of Directors, shall render to the President and Board of Directors, whenever they request it, an account of all his or her transactions as Treasurer and the financial condition of the Society and shall maintain a roster of all members, and shall have such other powers and perform such other duties as may be prescribed by the Board of Directors or the Bylaws.

Section 6. The Immediate Past President shall be an honorary officer but shall not vote as an officer or Director.

Section 7. Each officer shall, upon the expiration of his or her term, or the termination of his or her duties for any other reason, deliver to his or her successor the records of the office.

Section 8. Except for the duty of presiding at meetings, each officer shall do or cause to be done his or her duties.

Section 9. A vacancy, other than one caused by expiration of a term, in the office of Vice-President, Secretary, of Treasurer shall be filled by a vote at the next Board Meeting. A new officer thus elected shall complete the term of office of the Director whom he or she replaces.

ARTICLE VI - Governing Body

Section 1. All official business of the Society shall be conducted by the Board of Directors of the Society (hereinafter referred to as "the Board"). Only members of the Society shall be eligible for Board membership.

Section 2. The Board shall consist of the elected officers of the Society, the chairpersons of such standing committees as may be appointed by the President with the approval of the Board, chapter representatives, six (6) Directors elected

by the general membership, and the editors of *Missouriensis* and *Petal Pusher.*

Section 3. Chairpersons of standing committees shall serve for the term of the appointing President. Chapter representatives shall serve for one (1) year. Two (2) of the six (6) elected Directors shall be elected each year and shall serve three (3) year terms.

Section 4. Each Director shall have one (1) vote and shall serve without compensation.

Section 5. After a Director other than a chapter representative is absent for three (3) consecutive meetings, the Board may declare the office vacant.

Section 6. Any Director may be removed from office by resignation, death, or incapacity. Resignations shall be effective with the date of receipt of notice delivered to an officer or at any later time specified, and need not be accepted by the Board to be effective.

Section 7. A vacancy on the Board other than one created by loss of an officer or chapter representative or by expiration of his or her term shall be filled by a vote at a Board meeting. A new Director thus elected shall complete the term of office of the Director whom he or she replaces.

Section 8. There shall be four (4) regularly scheduled Board meetings per year. One (1) of these Board meeting shall be held in the same seven (7) day period as the annual membership meeting. If a quorum is not present at a Board meeting, the Directors present may adjourn the meeting but it will count as one (1) of the four (4) regularly scheduled Board meetings for that year.

Section 9. Additional meetings may be called by the President, or in his or her absence or inability, by the Vice-President. In the event of the refusal of the President to act, a special meeting may be called by five (5) Directors. All Directors shall be notified in writing not less than ten (10) days before such meeting of the date, time, and place of the meeting.

Section 10. The presence of forty percent (40%) of the Directors at a Board meeting shall constitute a quorum for the transaction of business. Every act or decision by a majority of the Directors present at a Board meeting duly held, at which a quorum is present, shall be regarded as a valid act of the Board except as provided elsewhere in the Bylaws of the Society.

ARTICLE VII - Elections

Section 1. Not later than December 31 each year, a nominating committee consisting of a chairperson and two (2) or more members of whom only one (1)

is a Director shall be appointed by the President with the approval of the Board. The President shall instruct the nominating committee in the performance of its duties.

Section 2. Not later than February 28 each year, the nominating committee shall nominate one (1) or more candidates other than themselves for each office and elective Board seat to be filled, and shall notify the membership in writing, either by publication in the *Petal Pusher* or by separate mailing, of the names of the nominating committee, the offices to be filled, the names of the nominees, and the closing date for nominations. In the same mailing, instructions for nominations from the membership and a mailing address for the nominating committee shall be provided. The closing date for nominations shall not be less than twenty (20) days from the date of the mailing.

Section 3. Additional nominations may be made by the membership by a written nomination from one member and a written second by another member. Each nomination must be accompanied by a written confirmation of willingness to serve by the nominee.

Section 4. Not later than March 31 each year, a ballot committee consisting of a chairperson and two (2) or more members of which no more than one (1) is a Director shall be appointed by the President with the approval of the Board. The President shall instruct the ballot committee in the performance of its duties.

Section 5. Within five (5) days of the close of nominations, the nominating committee shall provide to the ballot committee the names of all the candidates and the office for which each is nominated.

Section 6. If only one (1) candidate has been nominated for an office by the closing date of the nominations, the ballot committee shall declare that candidate elected by acclamation, and that candidate shall not be placed on the ballot. If only one (1) person is nominated for each of the offices to be filled, they shall all be declared elected by acclamation not later than May 20, and no ballot shall be prepared.

Section 7. Not later than April 30 each year, if there are any offices not elected by acclamation, the ballot committee shall cause a ballot to be mailed to the membership, either by publication in *Petal Pusher* or by separate mailing. The ballot shall contain the names of the offices to be filled, the names of all the candidates for each office, the address to which ballots are to be mailed, and the closing date, not less than twenty (20) days from the date of the mailing, of the election.

Section 8. Ballots shall be counted by the ballot committee. A plurality of votes cast for an office shall constitute election to the office. No votes for write-in

candidates shall be accepted.

Section 9. The ballot committee shall report to the President the names of those elected not later than ten (10) days before the annual meeting.

Section 10. In case of a tie vote, the Board shall decide by vote or by chance, such as flipping a coin, at the next Board meeting.

Section 11. Newly elected officers and other Directors shall take office at the conclusion of the annual meeting or the Board meeting held in the same seven (7) day period as the annual meeting, which ever is later.

ARTICLE VIII - Publications

Section 1. The official publications of the Society are *Missouriensis* and *Petal Pusher*. *Missouriensis* shall be a journal to report botanical information and other material as directed by the Board. *Petal Pusher* shall be a newsletter for the publishing of information of meetings, activities and elections in a timely manner, and other material as directed by the Board.

Section 2. Both publications shall be published at times directed by the Board.

ARTICLE IX - Chapter and Affiliate Organizations

Section 1. A group of five (5) or more persons, members or nonmembers of the Society, may organize a chapter of the Society by a request to the Society Secretary and with approval of the Board. The request shall be accompanied by the payment of current dues for each nonmember to the Society Treasurer.

Section 2. Members of each chapter shall elect their own officers, consisting of at least a President, Vice-President, Secretary and Treasurer or Secretary/Treasurer. All election results shall be promptly reported to the Secretary of the Society.

Section 3. Each chapter shall annually designate a representative to the Board. The name of the designated representative shall be reported to the Secretary of the Society not less than five (5) days before the annual meeting. Each chapter shall report a chapter representative vacancy and any new chapter representative designee to the Secretary of the Society immediately.

Section 4. Chapter representatives may be represented by an alternate presenting a written statement to that effect from any officer of that chapter at the beginning of each Board meeting. Such and alternate shall have all the rights and privileges as the chapter representative would have had at that Board meeting.

Section 5. Chapter representatives and alternates may be chosen in any manner

the chapter wishes but each must be a member in good standing of the Society and of the chapter.

Section 6. All members of a chapter must be members of the Society, and are entitled to all the privileges pertaining thereto.

Section 7. Local chapters may establish chapter dues in addition to Society dues.

Section 8. Chapter meetings shall be held not less than four (4) times annually, the time and place to be decided by the chapter officers.

Section 9. Chapters may adopt their own Bylaws, not inconsistent with those of the Society.

Section 10. Each chapter treasurer shall collect the annual dues of the Society from each member and shall remit the dues to the Treasurer of the Society.

Section 11. An already organized club or society may be known officially as a affiliate of the Society upon payment of annual dues as set by the Board. One copy of *Missouriensis* and one of *Petal Pusher* shall be sent to the President of the affiliate organization. Neither affiliate organizations nor members of affiliate organizations may vote in any matter brought before the members of the Society unless they are also regular members of the Society.

Section 12. No chapter or affiliated society, nor any officer or member thereof, except with the approval of the Board, shall have power to act for the Society in any official manner, financially or otherwise. Chapters shall hold harmless the Society from any liability in connection with activities or functions of the chapters.

ARTICLE X - Fiscal Year

The fiscal year of the Society shall be the calendar year.

ARTICLE XI - Amendments

These Bylaws may be amended by an affirmative vote of two-thirds (66.7%) of the Board of Directors.

MISSOURI BOTANICAL RECORD 13

Wallace R. Weber
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Southwest Missouri State University
Springfield, MO 65804-0095

William Corcoran
Department of Geosciences
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The *Missouri Botanical Record* is the official register for new county records of all vascular plant taxa in Missouri. To qualify for inclusion in this record, a voucher specimen of the record taxon must be deposited in a recognized herbarium and verified by the curator. Following the format used below, please submit all records to Dr. Wallace R. Weber, Department of Biology, Southwest Missouri State University, Springfield, MO 65804-0095.

In the *Flora of Missouri*, Steyermark used only a single map number to refer to each species, even though several subspecific taxa were listed. In these instances, various symbols were used to represent each taxon on a single Missouri map with counties. In the *Missouri Botanical Record* a decimal system is used, with .1 assigned to the first subspecific taxon listed by Steyermark, .2 for the second, and so on. Point nine nine (.99) is used to designate a species in which Steyermark included one or more subspecific taxa, but which was not specified by the collector. Point zero nine (.09) identifies a taxon not included respectively, while "nv" indicates that no subspecific category has been recognized.

Contributors for this issue include: Hazel Ayers, Doniphan, Alan Brant, Missouri Botanical Garden, Arthur Christ, St. Louis, Richard L. Clawson, MO Dept. of Conservation, Michael Currier, MO Dept. of Conservation, Edgar Denison, Kirkwood, Don Faber-Langendoen, MO Botanical Garden, Roy Gereau, MO Botanical Garden, Greg Gremaud, MO Dept. of Conservation, Karen Haller and John Molyneaux, St. Louis, Robert Mohlenbrock, Southern Illinois University, J. Mark Pelton, MO Dept. of Conservation, Bruce Schuette, MO Dept. of Natural Resources, Timothy Smith, MO Dept. of Conservation., Fr. James Sullivan, New Haven, Bill Summers, St. Louis, George & Kay Yatskievych, Flora of MO Project.

MAP	TAXON	COUNTY	DATE	COLLECTOR	HERB
		ISOETACEAE			
8	*Isoetes melanopoda* f. *melanopoda*	Lawrence	05/23/88	*Yatskievych 88-48*	MO
8	*Isoetes melanopoda* f. *melanopoda*	St. Clair	05/19/88	*Yatskievych 88-14*	MO
		EQUISETACEAE			
13.99	*Equisetum hyemale*	Lincoln	10/25/88	*Schuette 1939*	MO
		POLYPODIACEAE			
31	*Notholaena dealbata*	Pike	09/09/87	*Yatskievych 87-21*	MO
44	*Asplenium resiliens*	Jefferson	04/20/90	*Yatskievych 90-15*	MO
52.99	*Athyrium filix-femina*	Ozark	04/27/89	*Smith 2833*	MO
		SPARGANIACEAE			
73	*Sparganium androcladum*	Taney	06/07/89	*Smith 2879*	MO
		NAJADACEAE			
79	*Potamogeton diversifolius*	Perry	05/26/86	*Brant & O'Donnell 853*	MO
81	*Potamogeton amplifolius*	Madison	08/15/89	*Haller & Molyneaux 7*	MO
84	*Potamogeton illinoensis*	Ralls	06/20/74	*Hudson 585*	MO
		GRAMINEAE			
116	*Bromus tectorum*	Ripley	07/00/89	*Ayers s.n.*	MO
120	*Festuca elatior* var. & f. *elatior*	Monroe	06/04/74	*Hudson 213*	MO
120.20	*Festuca elatior* var. *arundinacea*	Audrain	06/28/74	*Hudson 693*	MO
120.20	*Festuca elatior* var. *arundinacea*	Monroe	06/02/74	*Hudson 145*	MO
120.20	*Festuca elatior* var. *arundinacea*	Pike	06/26/74	*Hudson 632*	MO
120.20	*Festuca elatior*	Ralls	06/01/74	*Hudson 102*	MO

	var. *arundinacea*				
121	*Festuca obtusa*	Caldwell	06/07/69	*Henderson 69-12*	MO
121	*Festuca obtusa*	Christian	07/05/75	*Sanders 75024*	MO
134	*Poa pratensis*	Pike	06/26/74	*Hudson 635*	MO
138	*Poa wolfii*	Cass	05/06/87	*Smith 2421*	MO
148	*Eragrostis cilianensis*	Holt	07/09/86	*McGregor*	MO
154.99	*Eragrostis spectabilis*	Ripley	10/05/88	*Yatskievych 88-29*	MO
173	*Triplasis purpurea*	St. Charles	09/22/88	*Yatskievych 88-222*	MO
221	*Phleum pratense*	Ste. Genevieve	06/15/86	*Mohlenbrock 21264*	MO
221	*Phleum pratense*	Webster	06/07/74	*Thompson 2073*	MO
232	*Muhlenbergia capillaris*	Douglas	10/02/89	*Yatskievych 89-374*	MO
235	*Sporobolus asper* var. *asper*	Monroe	10/19/86	*Brant 1020*	MO
236.99	*Sporobolus clandestinus*	Douglas	10/02/89	*Yatskievych 89-384*	MO
238	*Sporobolus heterolepis*	Stone	09/15/88	*Smith 2801*	MO
240.10	*Sporobolus cryptandrus* var. *cryptandrus*	St. Charles	09/22/88	*Yatskievych 88-221*	MO
245	*Stipa spartea*	Holt	06/03/90	*Yatskievych 90-138*	MO
258	*Schedonnardus paniculatus*	Holt	07/09/86	*McGregor 37327*	MO
271	*Phalaris arundinacea*	Ralls	06/16/74	*Hudson 456*	MO
278.99	*Digitaria sanguinalis*	Audrain	08/00/79	*Webster 1874*	MO
278.99	*Digitaria sanguinalis*	Barry	09/07/79	*Hornberger 833*	MO
298.99	*Panicum linearifolium*	Bollinger	06/03/87	*Schuette 1517*	MO
298.99	*Panicum linearifolium*	Ralls	05/30/74	*Hudson 78*	MO
306.10	*Panicum dichotomum* var. *dichotomum*	Mercer	06/05/88	*Yatskievych 88-106*	MO
306.99	*Panicum dichotomum*	Lincoln	07/18/86	*Faber-Langendoen 42*	MO
311.99	*Panicum villosissimum*	Ste. Genevieve	09/15/86	*Mohlenbrock 21289*	MO
315.20	*Panicum oligosanthes* var. *scribnerianum*	Gasconade	05/30/87	*Gereau 2317*	MO
315.20	*Panicum oligosanthes* var. *scribnerianum*	Holt	06/03/90	*Yatskievych 90-137*	MO
316	*Panicum ravenelii*	Stone	07/13/89	*Smith 2954*	MO
319.99	*Panicum commutatum*	Audrain	06/29/74	*Hudson 686*	MO
321	*Panicum latifolium*	Benton	05/30/79	*Nelson s.n.*	MO
327	*Panicum gattingeri*	Platte	07/11/83	*Delozier 1283*	MO
339.30	*Echinochloa muricata*	Dallas	07/09/89	*Yatskievych*	MO

	var. *microstachya*			*89-187*	
339.30	*Echinochloa muricata* var. *microstachya*	New Madrid	08/16/87	*Gereau & Brant 2370*	MO
340	*Setaria glauca*	Crawford	06/14/86	*Faber-Langendoen 140*	MO
341	*Setaria geniculata*	Taney	07/10/89	*Smith 2937*	MO
		CYPERACEAE			
379.99	*Cyperus strigosus*	Ste. Genevieve	07/11/86	*Mohlenbrock 21341*	MO
383	*Cyperus plukenetii*	Butler	08/01/89	*Christ s.n.*	MO
387.10	*Cyperus ovularis* var. var. *sphaericus*	Taney	07/10/89	*Smith 2935*	MO
391	*Eleocharis quadrangulata*	Christian	07/09/75	*Sanders 75019*	MO
396	*Eleocharis obtusa* var. *obtusa*	Warren	09/06/87	*Steyermark 132183*	MO
396.99	*Eleocharis obtusa*	Ste. Genevieve	08/15/89	*Mohlenbrock 9385*	MO
398	*Eleocharis smallii*	Mercer	06/05/88	*Yatskievych 88-105*	MO
399	*Eleocharis macrostachya*	Linn	06/04/88	*Yatskievych 88-93*	MO
442	*Scleria verticillata*	Douglas	10/02/89	*Yatskievych 89-382*	MO
446.10	*Carex retroflexa* var. *texensis*	St. Louis	04/27/86	*Brant 826*	MO
447	*Carex convoluta*	Douglas	06/09/89	*Smith 2892*	MO
447	*Carex convoluta*	Stoddard	05/23/89	*Summers 2896*	MO
448	*Carex rosea*	Stoddard	05/23/89	*Yatskievych 89-103*	MO
449	*Carex cephalophora* var. *cephalophora*	Holt	06/03/90	*Yatskievych 90-140*	MO
451	*Carex arkansana*	Stoddard	05/24/89	*Summers 2898*	MO
453.30	*Carex gravida* var. *lunelliana*	Shannon	05/07/89	*Yatskievych 89-74*	MO
456	*Carex vulpinoidea*	Douglas	06/01/89	*Smith 2856*	MO
456	*Carex vulpinoidea*	Ste. Genevieve	05/26/86	*Mohlenbrock 21279*	MO
457	*Carex annectans*	Monroe	06/02/74	*Hudson 164*	MO
457	*Carex annectans*	Ralls	06/02/74	*Hudson 203*	MO
457.20	*Carex annectans* var. *xanthocarpa*	Stoddard	05/24/89	*Yatskievych 89-119*	MO
457.99	*Carex annectans*	Stoddard	05/24/89	*Summers 2901*	MO
461.99	*Carex stipata*	Stoddard	05/23/89	*Summers 2893*	MO

461.99	*Carex stipata*	Stoddard	05/23/89	*Yatskievych 89-107*	MO
472	*Carex tenera*	Linn	06/04/88	*Yatskievych 88-89*	MO
472	*Carex tenera*	Mercer	06/05/88	*Yatskievych 88-101*	MO
476	*Carex brevior*	Calloway	05/26/86	*Faber-Langendoen 89A*	MO
476	*Carex brevior*	Franklin	08/14/86	*Faber-Langendoen 185*	MO
478	*Carex bicknellii*	Stoddard	05/24/89	*Yatskievych 89-120*	MO
503	*Carex crawei*	St. Francois	04/29/89	*Yatskievych 89-41*	MO
508.30	*Carex amphibola* var. *turgida*	Shannon	05/07/89	*Yatskievych 89-85*	MO
516	*Carex swanii*	Stoddard	05/23/89	*Yatskievych 89-111*	MO
519	*Carex bushii*	Calloway	05/26/86	*Faber-Langendoen 89B*	MO
531.99	*Carex crinita*	Douglas	06/01/89	*Smith 2857*	MO
544	*Carex vescicaria* var. *monile*	Mercer	06/05/88	*Yatskievych 88-102*	MO
545	*Carex grayii*	Pike	06/25/74	*Hudson 619*	MO
548	*Carex lupulina*	Monroe	06/02/74	*Hudson 158*	MO
549	*Carex lupuliformis*	Mississippi	06/23/83	*Heineke 3194*	MO

LEMNACEAE

556	*Spirodela oligorhiza*	Stoddard	08/27/89	*Yatskievych 89-339*	MO
558	*Lemna minor*	Jefferson	10/04/86	*Brant & O'Donnell 1007*	MO
562	*Wolffia columbiana*	Stoddard	09/23/87	*Yatskievych 87-79*	MO

JUNCACEAE

585	*Juncus effusus* var. *solutus*	Lawrence	05/23/88	*Yatskievych 88-43*	MO
590.99	*Juncus tenuis*	Ste. Genevieve	06/15/86	*Mohlenbrock 21311*	MO
591	*Juncus interior*	Calloway	05/26/86	*Faber-Langendoen 85*	MO
591	*Juncus interior*	Douglas	06/15/89	*Smith 2899*	MO

592	*Juncus dudleyi*	Douglas	06/09/89	*Smith 2889*	MO
593.99	*Juncus marginatus*	Lincoln	07/15/86	*Faber-Langendoen 173*	MO
594.99	*Juncus biflorus*	Hickory	07/05/89	*Currier 89-036*	MO
594.99	*Juncus biflorus*	Ste. Genevieve	07/11/86	*Mohlenbrock 21352*	MO
601	*Juncus torreyi*	Crawford	07/09/89	*Yatskievych 89-201*	MO
601	*Juncus torreyi*	Douglas	07/03/89	*Smith 2918*	MO
601	*Juncus torreyi*	Mercer	06/05/88	*Yatskievych 88-104*	MO
603	*Juncus debilis*	Stoddard	05/24/89	*Yatskievych 89-118*	MO
605	*Juncus diffusissimus*	St. Francois	09/03/89	*Yatskievych 89-352*	MO

LILIACEAE

618.20	*Allium vineale* f. *compactum*	Buchanan	06/06/88	*Currier 197*	MO
621	*Allium canadense*	Ste. Genevieve	06/16/89	*Mohlenbrock 9645*	MO
622	*Allium mutabile*	Lawrence	05/23/88	*Yatskievych 88-49*	MO
632	*Camassia angusta*	Hickory	06/05/89	*Currier 89-027*	MO
642	*Polygonatum biflorum*	Ripley	07/00/89	*Ayers s.n.*	MO
643	*Polygonatum biflorum*	Monroe	06/17/74	*Hudson 509*	MO
652.10	*Smilax herbacea* var. *lasioneura*	Reynolds	06/10/89	*Yatskievych 89-153*	MO

AMARYLLIDCAEAE

660	*Narcissus poeticus*	Taney	04/20/89	*Smith 2818*	MO

IRIDACEAE

668	*Iris germanica*	Barton	06/01/90	*Yatskievych 90-105*	MO
670	*Iris virginica* var. *shrevei*	Ripley	07/00/89	*Ayers s.n.*	MO
675	*Nemastylis nuttallii*	Hickory	06/05/89	*Currier 89-029*	MO
677	*Sisyrinchium albidum*	St. Francois	04/29/89	*Yatskievych 89-55*	MO
679	*Sisyrinchium bermudiana*	Ste. Genevieve	05/18/86	*Mohlenbrock 21359*	MO

ORCHIDACEAE

687.10	*Habenaria flava* var. *herbiola*	Monroe	06/04/74	*Hudson 226*	MO
689	*Habenaria lacera*	Ralls	06/16/74	*Hudson 455*	MO
699	*Spiranthes tuberosa*	Dade	09/02/85	*Collett 357*	MO
701	*Spiranthes vernalis*	Douglas	07/03/89	*Smith 2923*	MO
702	*Spiranthes cernua*	Ripley	07/00/89	*Ayers s.n.*	MO
702	*Spiranthes cernua*	Scotland	09/11/86	*Brant 989*	MO
703	*Spiranthes ovalis*	Jefferson	09/27/86	*Brant 1004*	MO
704	*Spiranthes lucida*	Douglas	06/09/89	*Smith 2890*	MO
704	*Spiranthes lucida*	Ripley	07/00/89	*Ayers s.n.*	MO
707	*Corallorhiza wisteriana*	Ste. Genevieve	04/14/86	*Mohlenbrock 21303*	MO
712	*Aplectrum hyemale*	Clinton	05/21/89	*Summers 2888*	MO
713	*Hexalectris spicata*	Taney	07/13/89	*Smith & Gremaud 2947*	MO

FAGACEAE

766.10	*Quercus imbricaria*	Howell	10/05/88	*Yatskievych 88-251*	MO

ARISTOLOCHACEAE

805	*Aristolochia tomentosa*	Christian	05/29/82	*Redfearn 32979*	MO
805	*Aristolochia tomentosa*	Mississippi	10/06/86	*Smith 2266*	MO

CARYOPHYLLACEAE

930	*Holosteum umbellatum*	Montgomery	04/16/89	*Schuette 1968*	MO

RANUNCULACEAE

963	*Hydrastis canadensis*	Perry	07/20/85	*Brant et al. 660*	MO
963	*Hydrastis canadensis*	Stoddard	05/23/89	*Yatskievych 89-98*	MO
965	*Actaea pachypoda*	Buchanan	03/88	*Currier 206*	MO
968.20	*Thalictrum revolutum* f. *glabrum*	Carter	06/16/87	*Chapman s.n.*	MO
972.10	*Delphinium tricorne* f. *tricorne*	Webster	05/24/75	*Thompson 2397*	MO
975.99	*Delphinium carolinianum*	Ripley	05/20/87	*Smith 2439*	MO
982.99	*Ranunculus abortivus*	Audrain	04/13/85	*Brant & Gereau 550*	MO
997	*Myosurus minimus*	Crawford	04/09/89	*Yatskievych*	MO

				89-07	
1000.20	*Anemone virginiana* f. *leucosepala*	Franklin	06/17/86	*Raveill 2387*	MO
1008	*Clematis pitcheri*	Cass	05/27/87	*Smith 2457*	MO
		ROSACEAE			
1148	*Pyrus angustifolia*	Stoddard	05/23/89	*Yatskievych 89-96*	MO
1191.99	*Crataegus pruinosa*	St. Francois	04/29/89	*Yatskievych 89-53*	MO
		LEGUMINOSACEAE			
1283.20	*Baptisia leucophaea* var. *glabrescens*	St. Francois	04/29/89	*Yatskievych 89-57*	MO
1330.10	*Astragalus canadensis* var. *canadensis*	Montgomery	07/15/89	*Schuette 2060*	MO
1344	*Desmodium rigidum*	Polk	09/20/87	*Yatskievych 87-58*	MO
1384	*Lathyrus hirsutus*	Stoddard	05/24/89	*Yatskievych 89-115*	MO
1395	*Strophostyles leiosperma*	Montgomery	07/15/89	*Schuette 2068*	MO
1398.99	*Amphicarpaea bracteata*	Douglas	10/02/89	*Yatskievych 89-389*	MO
1400	*Pueraria lobata*	Wayne	08/27/89	*Yatskievych 89-321*	MO
		ZYGOPHYLLACEAE			
1418	*Tribulus terrestris*	St. Charles	09/17/89	*Yatskievych 89-364*	MO
		EUPHORBIACEAE			
1437	*Acalypha ostryifolia*	St. Charles	09/17/89	*Yatskievyxh 89-365*	MO
1445.10	*Euphorbia heterophylla* var. *heterophylla*	Lincoln	08/25/89	*Schuette 2126*	MO
1449	*Euphorbia cyparissias*	Jefferson	04/26/90	*Yatskievych 90-18*	MO
		AQUIFOLIACEAE			
1475	*Ilex decidua*	Warren	10/18/87	*Steyermark*	MO

132213

ACERACEAE

1482.20	*Acer saccharum* var. *saccharum* f. *schneckii*	Shannon	08/19/89	*Yatskievych 89-294*	MO

RHAMNACEAE

1495	*Rhamnus cathartica*	Lincoln	06/08/89	*Yatskievych 89-144*	MO

LYTHRACEAE

1586	*Cuphea petiolata*	Montgomery	08/24/89	*Schuette 2121*	MO

ONAGRACEAE

1605.10	*Oenothera laciniata* var. *laciniata*	Montgomery	05/22/89	*Schuette 1999*	MO
1616.20	*Gaura biennis* var. *pitcheri*	Christian	09/19/87	*Yatskievych 87-54*	MO

UMBELLIFERAE

1631	*Sanicula gregaria*	Audrain	06/28/74	*Hudson 690*	MO
1632	*Sanicula canadensis* var. *canadensis*	Callaway	07/30/86	*Faber-Langendoen 91*	MO
1637.10	*Chaerophyllum taintutieri* var. *tainturieri*	St. Clair	05/18/88	*Yatskievych 88-18*	MO
1655	*Cryptotaenia canadensis*	Montgomery	06/10/89	*Schuette 2038*	MO
1670.20	*Thaspium trifoliatum* var. *flavum*	Linn	05/09/89	*Schuette 1983*	MO

PRIMULACEAE

1698.99	*Dodecathion meadia*	Callaway	05/03/89	*Clawson s.n.*	MO

GENTIANACEAE

1725	*Polypremum procumbens*	Butler	08/01/89	*Christ 245-2-1*	MO

CONVOLVULACEAE

1778.20	*Ipomoea lacunosa*	St. Charles	09/22/88	*Yatskievych*	MO

	f. *purpurata*			*88-220*	
1787	*Cuscuta campestris*	Jasper	08/04/88	*Yatskievych 88-137*	MO
1789	*Cuscuta gronovii*	St. Charles	09/22/88	*Yatskievych 88-219*	MO

POLEMONIACEAE

1797.30	*Phlox pilosa* var. *fulgida* f. *fulgida*	St. Francois	04/29/89	*Yatskievych 89-59*	MO

BORAGINACEAE

1836.10	*Mertensia virginica* f. *virginica*	Montgomery	04/16/89	*Schuette 1964*	MO

LABIATAE

1858.10	*Scutellaria lateriflora* f. *lateriflora*	Clark	09/10/87	*Yatskievych 87-23*	MO
1861	*Scutellaria nervosa*	Monroe	06/04/74	*Hudson 224*	MO
1862.20	*Scutellaria parvula* var. *australis*	Clinton	05/13/72	*Croat 17123*	MO
1862.30	*Scutellaria parvula* var. *leonardii*	Barton	05/20/88	*Yatskievych 88-31*	MO
1878	*Lamium purpureum*	Montgomery	04/16/89	*Schuette 1973*	MO
1888.20	*Monarda fistulosa* var. *mollis*	Montgomery	07/15/89	*Schuette 2061*	MO
1907	*Lycopus virginicus*	Warren	09/06/87	*Steyermark 132186*	MO
1912	*Mentha spicata*	Barry	07/12/79	*Hornberger 528*	MO

SCROPHULARIACEAE

1961.20	*Verbascum blattaria* f. *erubescens*	Montgomery	07/15/89	*Schuette 2079*	MO
1982.10	*Veronicastrum virginicum* f. *virginicum*	Bollinger	08/08/89	*Schuette 2111*	MO
1987.10	*Veronica peregrina* var. *peregrina*	Crawford	04/09/89	*Yatskievych 89-10*	MO
1989	*Veronica polita*	Crawford	04/09/89	*Yatskievych 89-09*	MO
1996	*Gerardia skinneriana*	Dade	09/11/87	*Summers 1802*	MO

PHRYMACEAE

2025.10	*Phryma leptostachya* var. *leptostachya*	Montgomery	07/15/89	*Schuette 2078*	MO

COMPOSITAE

2122.10	*Eupatorium sessilifolium* var. *brittonianum*	Montgomery	08/24/89	*Schuette 2123*	MO
2143	*Heterotheca latifolia*	St. Charles	09/22/88	*Yatskievych 88-225b*	MO
2144	*Chrysopsis pilosa*	Dade	09/20/87	*Yatskievych 87-62*	MO
2160.20	*Solidago ulmifolia* var. *palmeri*	St. Francois	09/11/88	*Yatskievych 88-215*	MO
2165	*Solidago rigida* var. *rigida*	Ozark	10/12/88	*Yatskievych 88-253*	MO
2178.30	*Aster azureus* var. *poaceus*	Ripley	10/05/88	*Yatskievych 88-241*	MO
2217	*Gnaphalium purpureum*	St. Clair	05/19/88	*Yatskievych 88-19*	MO
2220.10	*Iva ciliata* var. *cilata*	Stoddard	09/23/87	*Yatskievych 87-74*	MO
2260.10	*Echinacea purpurea* var. *purpurea* f. *purpurea*	Bollinger	08/08/89	*Schuette 2110*	MO
2296.20	*Coreopsis tripteris* var. *deamii*	Bollinger	08/08/89	*Schuette 2108*	MO
2309	*Cosmos sulphureus*	Ozark	10/13/88	*Yatskievych 88-256*	MO
2348.10	*Senecio plattensis*	Lincoln	05/08/89	*Schuette 1977*	MO
2350.99	*Senecio aureus*	Linn	05/09/89	*Schuette 1980*	MO
2376	*Krigia virginica*	Scott	05/23/89	*Yatskievych 89-90*	MO